

# Urbanization and its Effects on the Environment, Society and Sustainable Development

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**ABSTRACT:** Formation and development of cities in urban systems of industrial countries are generally according to industrial development and follow a united and moderate pattern. Nonetheless, in developing countries, not being in accordance with sustainable industrial and social development of these countries, increasing trend of urbanization has caused raft of environmental, economic and social problems. Paying careful attention to urban development principles and environmental concerns, leads to a more sustainable development for urban development. Moreover, urbanization is directly affected by urban development trend of cities and could cause a lot of undesirable economic damage. In fact, high amount of population in metropolises leads to several needs such as educational facilities, transportation facilities, job, clean air, healthy potable water etc. In this research, the effects of urbanization and urban development on the environment, namely air and water pollution, and also on the society has been studied regarding principles of sustainable development and infrastructures of the cities. According to our study, it has been depicted that in many developing countries, namely Iran, the side effects of urbanization and urban development is not considered carefully and this has led to numerous environmental, economic and social drawbacks in the country during last decades.

**KEYWORDS:** Urbanization, Environment, Urban Development, Environmental Effects, Sustainable Development

## I. INTRODUCTION

Formation and development of cities in urban systems of industrial countries are generally based on industrial development and follow a united and moderate pattern. Nonetheless, in developing countries, not being in accordance with sustainable industrial and social development of these countries, increasing trend of urbanization has cased raft of environmental, economic and social problems. During past decades, urban industries become more important than rural ones such as agriculture industry. In developing countries, especially those belong to Middle East and Iran, investing based on oil has considered and this has led to immigration from rural areas to cities. Moreover, social and political concerns have played a crucial role in the vastness and number of cities. Development trend in cities has been caused by three main factors: notable population growth and reproduction in cities, immigration and transforming rural areas to cities. Population transferring, especially in megacities and metropolises, has caused numerous irreparable impacts, namely tendency of people to live in suburbs which depends on some parameters such as economic poverty, type of job, cultural paradoxes, illiteracy, cultural and ethnic identity and lack of control. Moreover, environmental crisis is another consequence of urban development. However, many experts believe that one of the requirements of country development is urban development; because economic growth and development of each country depends on the rate of urban development. Hence, evaluating causes of uncontrollable growth of urbanization and its consequences is truly important in sustainable development policies. The scope of this study is to assess the effects of urbanization and urban development regarding some statistical analysis of specific countries and to propose a logical and applicable solution. The earth is being in serious dangers due to high amount of pollution production by human beings and these environmental disorders are growing in our planet like cancer. Shortage of natural resources and also many environmental crises have led to a grave concern for environmentalists. Finally, it has been proven that awareness of environmental issues is usually regarded as prerequisite to environmental management, urban development and construction engineering.

## II. LITERATURE REVIEW

A study is done about evaluating relationship between population growth, environmental pollution and economic growth in the year 1967 regarding causality examination. It has been demonstrated that a there is a two-way relationship between environmental effects and economic growth. Behboudi and Barghi have evaluated environmental effects of energy consumption and economic growth in Iran using time series data and regarding co-integration test. The result showed that 1% increase in population leads to 0.92% increase in CO<sub>2</sub> gas production and environmental pollution. Navabakhsh and Fathi, have studied about evaluation of urban development in Iran with emphasis on social

and economic activities. According to their results, urbanization pattern in Iran is based on one city and is based on centralism. In this situation, urbanization will be faced with several consequences such as injustice development, social inconveniences etc. (Rabifar et al.,) have studied about evaluation of urban sustainable development regarding environmental aspect and based on SWOT analysis. According to the results, opportunities cannot conquest threats still in spite of many environmental and social concerns.

### III. URBANIZATION AND MODERN LIFE

World Health Organization (WHO) considers urban development as one of the most effective phenomenon on human health in 21st century. This organization has published a report about basic problems of urbanization in the world. According to this report, urbanization is growing in every country but in different speed. As an example, the time period for reaching population of a city from 1 million to 8 million is 130 years for London in United Kingdom, 45 years for Bangkok in Thailand and only 25 years for Seoul in South Korea. During 1995-2005, urban population of developing countries has increased approximately 1.2 million people per week which has caused several problems for municipalities for developing sanitary and economic infrastructures.

#### 3.1. Urbanization and the Environmental Hygiene

Roughly 25% of developing countries citizenry use fossil fuel for heating and cooking. This energy resources cause indoor air pollution and respiratory diseases especially for children. Moreover, garbage collecting and recycling systems in third world countries have not improved considerably yet. High density of industrial centers and urban population is also a problem and has led to 5-11 °c increase in temperature compared with adjacent regions. The long term drawbacks of these problems could cause serious concerns about environmental hygiene and health of people.

#### 3.2. Urban Transportation and Health of Citizenry

In many metropolises of developing countries, an accelerated increase in the number of motor vehicles during past two decades caused heavy traffics and environmental pollution.

Traffic accidents are the 9th main cause for death of the people worldwide. Unfortunately, most of these traffic deaths occur in developing and third world countries. Almost half of the victims include pedestrian, bicycle riders and motorcycle riders. Lack of appropriate sidewalk and safe road for bicycle riders or motorcycle riders has led to disappointing life in poor towns. Moreover, not providing citizenry with these infrastructures, encouraging them to choose non-motor based vehicles and doing other health-based activities is ineffectual and pointless. Also lack of clean air and healthy water in metropolises has caused illnesses such as blood pressure, diabetes type 2, especial types of cancer and heart problems.

#### 3.3. Mental Health and Sanity in the Cities

Uncontrollable growth of urbanization is dangerous for mental health and sanity of many citizens. High population density, unemployment, poverty, cultural differences, loneliness and accommodation problems are some factors of mental stress intensification. According to statistics, urbanization causes an increase in mental illnesses. Also, children in megacities are more vulnerable to mental illnesses than those who live in rural areas. Living in apartments, is also a reason of depression in many citizens of metropolises. Furthermore, noise pollution, lack of trust and confidence and many cultural and social differences has led to fade safety feeling and psychic calmness.

### IV. CRITERIA AND REQUIREMENTS OF URBAN SUSTAINABLE DEVELOPMENT

#### 4.1. Sustainable Development Concept

There are several definitions about sustainable development. However, two definitions below enlighten this concept more:

- 1- Improving life quality and also considering environmental concerns.
- 2- Fulfilling requirements of current generation without causing limitation for next generation's facilities and capabilities to fulfil their requirements

#### 4.2. Urban Sustainable Development

The theory of urban sustainable development considers some concerns such as prevention of environmental urban pollution, decreasing production capacity and supporting recycling, discouraging non-profit development and fading poor and rich differences. Moreover, it pays careful attention to planning for reaching these purposes and believes that governments have to support urban environment with no reservation.

A sustainable city is built based on democracy and not based on domineering. The approach of sustainable development is also based on this concept that natural resources cannot be replaced with technology. Additionally, urban sustainable development can be practical by the time these requirements will be fulfilled:

- 1- Developing social equality for citizenry

- 2- Improving communion and social correlation of citizens
- 3- Improving social and familial basis
- 4- Strategic approach for urban sustainable development
- 5- Developing urban culture for urbanized societies
- 6- Increasing efficiency of urban policies
- 7- Developing citizen rights and urban legislation
- 8- Developing urban education for citizens
- 9- Requesting citizenry for continuous evaluation of urban management systems
- 10- Paying careful attention to environmental concerns

#### 4.3. Criteria of Urban Sustainability

World Commission on Environment and Development suggests these principles as essential features of a sustainable city:

- 1-Increasing economic and social opportunities for all citizens
- 2-Decreasing energy contribution in urban growth trend
- 3-Optimum usage of water, earth and other vital resources
- 4-Minimizing garbage and wastewater production and maximizing recycling
- 5-Developing management systems in more efficient and streamlined way for reaching economic, social and environmental purposes
- 6-Directing technologies, used in the city, to sustainable development goals.
- 7-Strengthening and consolidating different regions of the city in order to prevent and respond to social, environmental and economic threats, caused by human or natural resources.

### V. URBANIZATION AND ITS ENVIRONMENTAL CONSEQUENCES

In environmental economy literature, population growth is considered as one of the parameters of environmental contamination. Probable Urban development had been the most notable social-economic changes during past two centuries. Urbanization has influences opportunities for life quality upgrading. High rate of population growth and urban development and consequently increasing the amount of vehicles has led to increase in energy usage and different types of pollution in urban areas.

There are two approaches about relationship between urban population growth and environmental pollution. First approach indicates that population growth has a negative effect on the environment; because by urban development, infrastructure, transportation and energy using increase. The second approach states that developing urban culture leads to optimizing energy usage in cities compared with villages. Therefore, the relationship between urban population growth and environmental contamination could be positive or negative [14-16].

Several researchers have been conducted regarding urbanization and its environmental impacts in Iran and other countries. For example, Fetras and Fathi have demonstrated that urbanization is a crucial factor in contamination dispersal and has a major role in air pollution fluctuation. Therefore, paying attention to urban formation, especially in transportation section, could be quite acceptable solution for controlling urban air pollution and pollutant gases emission. Another study has depicted that population growth and increase in production has led to more energy using and environmental pollution.

Alam et al. in 2007 has assessed some significant factors of environmental pollution such as total population growth, economic growth, energy usage and urbanization on the environment of India and Pakistan for the years 1971-2005. The result of estimation model using Johansen-Juselius method shows that energy intension and CO<sub>2</sub> emission coefficients in a model in which economic growth is a dependent variable, is positive. Moreover, it has been proven that population growth, especially in urban areas, has a major effect in environmental pollution. Additionally, considering long-term period, these variables have caused negative effect on economic growth .

### VI. CONCLUSION

Living in a city, as a complicated and dynamic region, requires different rules and conditions in comparison with other areas. Likewise, managing and building a city needs accurate planning and organizing due to its importance and complicated characteristics.

Hence, developing a city has to be based on sustainable development and its principles. Despite the fact that economic aspects of development is really significant, it seems that development is something more than economic growth and regardless of financial status improvement, includes social equality, ethic values and native traditions. Urban

sustainable development represents a city with ethic framework and provides people with social welfare by using financial, social and natural resources.

Finally, the environmental effects of urbanization can be summarized as below:

1-Urbanization growth causes increase in transportation rate and fuel consumption which leads to air and noise pollution.

2-Urbanization growth has caused increase in water using and this has led to endangering groundwater resources and water pollution

3-Urbanization and urban career growth and consequently industrial production increase has led to increase in greenhouse gas and CO2 emission.

Therefore, some political solutions are suggested to prevent environmental effects caused by urban development:

1-Improving facilities and paying attention to rural areas in order to prevent rural immigration

2-Using new technologies to reduce fuel consumption in industries and urban vehicles

3-Developing communication and information technologies to decrease urban transportation

4-Developing public transportation and discourage over usage of personal vehicles.

5-Taking action for reduce dependence on oil-based industry .

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